

Abstract

A system for the solid phase polymerization of polymers wherein cold amorphous polymer is introduced to one or more crystallizers and heated to crystallize the polymer. The crystallized polymer is discharged to a reactor for polymerization of the polymer, and the hot polymer product of the reactor is discharged to a fluid bed cooler. The fluid bed cooler includes an inlet for the hot polymer and inlets for the gas used for agitating the polymer. Outlets for the polymer and for the off-gas are also provided. At least one spray nozzle is located in the cooler at a position adjacent the upper level of the polymer and water is introduced through the nozzle for contact with the polymer to achieve cooling of the polymer as a result of the vaporization of the water.

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